

text combining so much physiology and morphology with other branches of botanical science. The book has a great deal to recommend its adoption in those colleges in which a text is used.

C. L. CAREY.

THE NEW ENGLAND-ACADIAN SHORE LINE*

The book treats of the development of the shore line, its relation to rock structure, and especially to the geological and physiographic history of the region. Of local interest is the tracing of similarities between the Hudson River-Newark Bay region, the Connecticut Valley and the Bay of Fundy in all of which trap ridges, cut across diagonally by faults, form one part of the shore line. Glacial action, except by deposition, has had slight effect on the coast line, deep narrow bays frequently referred to as fjords being drowned river valleys. The only examples of true fjords are in the Mount Desert Island embayment and the drowned gorge of the Hudson in the Highlands. The general conclusion is drawn that the shore line is extremely youthful, only a few thousand years at, or near, the present level. In the softest rocks the wave erosion has cut only a thousand feet or so, while the amount of beach and bar building, even when using material furnished by the glaciers, is comparatively slight. The coast north of New York is one of recent submergence, reaching at least twelve hundred feet in the northern part, while to the south it is one of emergence. There was probably a long-enduring costal plain from New Jersey and southward to beyond Newfoundland at least to the close of the Tertiary period. This physiographic history seems to offer a reasonable explanation of the facts described by Hollick and Fernald of the occurrence of Pine Barren plants along the coast as far north as Newfoundland.

Of chief interest botanically are the chapters on costal marshes and swamps. Three types of marshes are distinguished along the Atlantic Coast, differing in the composition of the sub-soil, peat or silt in various mixtures. While these different types are somewhat unlike in appearance they have had similar histories.

* Douglas Johnson, *The New England-Acadian Shore Line*, pages xx, 608, John Wiley and Sons, New York, 1925. Price \$8.50.

The subsidence has been so gradual that the marsh grasses have grown uninterruptedly, till in places the roots and dead stalks can be followed from the growing grasses above high tide level to a depth far below the lowest ranges of the tide. The history of the marshes is discussed, their encroachment on fresh water swamps, their change due to bars forming between them and the sea, their burial under dunes, their destruction by changing currents and their reclamation by man. In addition to the definite evidence of slow post-glacial subsidence there is in places fictitious evidence of very recent subsidence, as in the case of drowned forests. It is shown that in many of these cases the forests developed at the edges of swamps and were destroyed by the natural or artificial opening of bars allowing the sea to enter and causing the formation of marshes. When marshes are drained or covered by drifting sand the peat level becomes considerably lower by drying and compression. Very interesting accounts are given of individual marshes along the Long Island and New England coast and especially of those of the Fundian region. In this latter there is found in one place a forest of stumps, with blackened rootstocks of ferns between, exposed on the side of the bay where it is covered at high tide by thirty feet of water. Apparently these stumps extend under the surface of the neighboring marsh. Though thousands of years old, the forest was composed of the same species that cover the near-by ridges today:—spruce, hemlock, birch, alder, ash, elm and other trees.

The book is interestingly written, well illustrated with maps, diagrams and photographs, printed on good paper and well bound in cloth. With each chapter there are extended references to the literature on the subject. While the chief interest will be for physiographers, there is much which the botanist will find of value.

GEORGE T. HASTINGS.

A LIST OF THE PLANTS OF EL SALVADOR.*

The flora of El Salvador, the smallest of American republics, has until recently been as little known as that of any Central

* Paul C. Standley and Salvador Calderón, *Lista Preliminar de las Plantas de El Salvador*. 8°, pp. 174, n. d. (published 14 Feb. 1925). Tipografía La Unión, San Salvador, El Salvador.